Managing the HCI stack: How Dell EMC VxRail compares to other VMware-based HCI technologies

Based on publicly available information

Dell Technologies and VMware offer multiple hardware and software products and solutions that could help an organization build a hyperconverged environment. Dell EMC™ VxRail™ is one such solution, offering an integrated and supported product that Dell EMC states delivers a curated experience. Two other examples are vSphere® Lifecycle Manager (vLCM), a software solution introduced with VMware vSphere 7.0 that helps in ongoing maintenance operations, and vSAN ReadyNodes™, physical servers that are pre-validated to run VMware vSAN and vSphere. Principled Technologies reviewed publicly available data on VxRail, vSAN ReadyNodes, and several other VMware technologies. In this interactive PDF and the accompanying report, we use that research to investigate what advantages customers might see by choosing VxRail.
VxRail is a jointly engineered, hyperconverged infrastructure solution from Dell Technologies and VMware that offers companies an integrated, software-defined solution for their workloads. It aims to deliver full integration and automation through the entire pre-validated VxRail hardware stack, VMware HCI software, and the VxRail HCI System Software suite, which consists of multiple elements that extend the VMware software's capabilities.

100+ dedicated VxRail team members
Over $60 million of lab investments
25,000+ runtime hours to test each major release

Learn how VxRail differs from other HCI solutions
How VxRail differs from other HCI solutions

The driving differentiator between VxRail and technologies such as vSAN ReadyNodes or vSphere Lifecycle Manager is Dell EMC VxRail HCI System Software, a suite of software capabilities unique to VxRail. Encompassing VxRail Manager, ecosystem connectors, automated lifecycle management, VxRail SaaS multi-cluster management, and more, VxRail HCI System Software provides the connective tissue between Dell Technologies hardware and VMware software that helps IT administrators to automate tasks within the HCI environment and manage the VxRail stack.
About VxRail

Components of VxRail HCI System Software

- **VxRail Manager**
- **Ecosystem connectors**
- **Lifecycle management**
- **Electronic compatibility matrix**
- **REST APIs**
- **SaaS-based multi-cluster management**
- **Secure Remote Services**
### About VxRail

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#### VxRail Manager

VxRail Manager is a vCenter plugin management interface where administrators can perform most VxRail tasks such as monitoring, shutdowns, and more.
Ecosystem connectors

These integrate with hardware and software components, providing the VxRail HCI System Software with the necessary information to recognize and update components across the board and enable automation.
VxRail LCM is designed to keep the clusters in what Dell refers to as a Continuously Validated State so that the clusters are up to date with the validated versions across all levels of the stack. These updates are automated and, after the update is acquired, launched with a single click.

Lifecycle management

VxRail LCM is designed to keep the clusters in what Dell refers to as a Continuously Validated State so that the clusters are up to date with the validated versions across all levels of the stack. These updates are automated and, after the update is acquired, launched with a single click.
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Electronic compatibility matrix

This is a matrix of compatible hardware, software, and firmware versions that the VxRail cluster uses to ensure that it is in a valid, supported state. The matrix tracks compatibility between multiple possible validated states, enabling customers to skip interim patches and releases.
VxRail clusters have publicly available API options to allow clusters to expand into the cloud and provide large-scale management and Infrastructure as Code via scripting and more.12

REST APIs

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SaaS-based multi-cluster management

This cloud-based tool uses data gathered from the VxRail clusters to provide analysis of host or hardware status, server health insights, upgrade planning, staging, and optional automated execution of upgrades.
In addition to serving as a single source for all support from hardware to software, Dell EMC Secure Remote Services provides VxRail customers with two-way remote connections that give Dell engineers direct access to the cluster for troubleshooting and repairs.14
Key capabilities of VxRail

- Lifecycle management
- Global management
- Cloud integration
- Support

Learn more about VxRail

Resources
Key capabilities of VxRail

Lifecycle management

VxRail HCI System Software includes components that help keep VxRail clusters in validated states, such as the VxRail LCM and the Electronic Compatibility Matrix. This method has several advantages over the image-based approach that vSphere Lifecycle Manager (vLCM) uses:

- VxRail allows customers to choose from a set matrix of tested, verified states. With an environment based on vLCM, IT staff must research, test, and choose their own desired state.

- The VxRail LCM validated state can span generations and other mixed-node use cases in a single cluster, while each vLCM image prefers configurations that are mostly homogenous.  

- While VxRail update packages maintain the continuity of the VxRail validated state, vLCM images require vendor-supplied packages for hardware compliance checks and firmware and drivers, or a vendor Hardware Support Manager (HSM) that works as a vCenter plugin. If the vendor addon doesn’t include specific drivers or firmware that the cluster needs to maintain the desired state, the administrator must manually add those to the image.

- VxRail continuously maintains the desired state, which includes updating the cluster as new versions become available. With vLCM, IT staff must create a separate image for each vSAN cluster of differing configurations and consistently edit images for new target states, such as new VMware software version releases.
Key capabilities of VxRail

Global management

Dell EMC VxRail HCI System Software offers a global SaaS multi-cluster management tool that provides two main functions for VxRail customers:

- The ability to manage clusters at scale across sites and geographies
- Insights into health and resource issues

This tool offers several benefits:

- If a workload’s performance starts to lag due to a cluster health issue, administrators can check the health scores to help determine where the problem lies.
- Using the predictive nature of VxRail multi-site manager to show that a cluster is approaching maximum capacity, companies can avoid workload performance issues by adding or adjusting resources accordingly.
- IT staff can use the metrics charting that VxRail multi-site manager provides to track the status of hardware resources.
Key capabilities of VxRail

Cloud integration

Deploying VMware Cloud Foundation to VxRail could offer several advantages over deployment on other VMware solutions such as vSAN Ready Nodes:

- VxRail offers full VMware Cloud Foundation integration, including a level of integration with Software Defined Data Center Manager (SDDC) that is unique to VxRail.\(^\text{23}\)
- VxRail LCM is integrated into the SDDC Manager and VMware Cloud Foundation automated updating process.\(^\text{24}\)

With integration between VxRail and VMware Cloud Foundation management tools, organizations may see manageability benefits on a VxRail system. And by expanding upgrade and patching capabilities, IT staff could save time and dedicate more attention to strategic tasks that foster organizational growth.\(^\text{25}\)

VxRail LCM also integrates with Tanzu Architecture for VxRail, a tool for cloud-native application development with Kubernetes containers.\(^\text{26}\)
Key capabilities of VxRail

Support

While all Dell Technologies customers benefit from the tier of support services they choose, as well as the status of Dell Technologies as a VMware-certified support partner, VxRail offers direct integrations with technical support. VxRail customers not only benefit from having a single place for all support needs for both hardware and software, but also enjoy integration with Dell EMC Secure Remote Services for call-home support. Additionally, the VxRail Manager plugin enables IT staff to open service requests to Dell Technologies directly from the vCenter portal.
Learn more

With VxRail, organizations could...

Gain IT efficiencies using VxRail Lifecycle Manager automated updates, with AI-driven health scores for monitoring, and one-stop-shop support

Reduce IT time spent on researching compatibility and testing new updates thanks to 100+ dedicated VxRail engineers working behind the scenes to validate updates for customers

Support different configurations without needing to purchase new hardware due to older hardware aging or current hardware not being identical, thanks to VxRail heterogeneous hardware support

Expand into the cloud with full VMware Cloud Foundation integration, including a unique level of integration with Software Defined Data Center Manager

Read the full report at http://facts.pt/Arzdcdd